METEOROLOGICAL OFFICE

NEWSLETTER FOR CLIMATOLOGICAL OBSERVERS IN ENGLAND AND WALES

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Produced by:-

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EDITORIAL

Writing this at Bracknell on a beautiful day in July, with the pollen count low and the petrol fume concentration high I should feel that all is well with the climatological scene. Unfortunately, quite clearly it is not. Discussion with course members at Shinfield Park reveals without doubt that there is a conspiracy to deprive some observers of the (doubtful) benefits of this Newsletter. Apparently it lies in 'IN' trays, read only by 'SIR' (or 'MADAM', I hasten to add) and not getting through to the sharp end. Please could all Madams (and Sirs) put a little tag on this Newsletter to say 'Send this to those who do the observing so that they may dispose of it as they consider best'. This should ensure that the intrinsic value at least of the Newsletter is not wasted.

There are 2 special extras to our third issue. Firstly, there is the extract from the 'Scotsman'. Although the Misses Redfern were synoptic and not climatological observers ie their reports were used at the time and not retrospectively, the sentiments expressed in the note, especially in the third paragraph, apply equally if not more so to climatological observers who supply data used for long-term purposes which are usually of much greater lasting importance.

Secondly, the article by Joyce Laing of our Climatological Services Branch (Met O 3b) will, I am sure, be of general interest to all of you and special interest to many. It is a very absorbing account. Needless to say, short accounts of such occurrences or of other items of general meteorological interest from observers will be welcomed for inclusion in the Newsletter. Personally I would be very interested to read something of the blizzard in the North-East on 16 March this year. I was then travelling South on A68 but became snowed-up. After thinking I would have to spend the night in the car I struggled through Consett to A1 and eventually made Catterick. I realised then how frightening it must be to be stranded in such conditions.

I hope by the time you read this you will have enjoyed a warm summer.

D P Smith

Vandalism

In the last Newsletter I wrote about vandalism. Perhaps it should have been entitled Vandalism - Human and this small offering entitled Vandalism - Animal. The only difference between the two is that the humans should know better but the animals can not.

It is up to the humans to make the enclosure strong enough to prevent animals gaining entry. Small animals are difficult to keep out, particularly rabbits. These creatures can cause havoc to ground instruments eg grass minimum, soil thermometers and even the concrete minimum. If this is a problem, fine mesh netting around the bottom edge of the fencing may help to deter them.

One cannot always assume animals are to blame. During the winter months when bent stem soil thermometers are found broken it can be frost causing the damage and not the animals.

There is a practice at some stations to use wire mesh and other devices immediately over these instruments in order to afford protection. We actively discourage this type of protection as it can adversely affect the accuracy of readings.

We have had reports of deer jumping an enclosure fence and even goats and sheep gaining entry and causing damage. These last two will only enter the enclosure where the access is easy. A strong fence with a secured gate will be protection enough from them.

Seagulls can be a great problem to owners of sunshine records. These birds will remove the sunshine card completely, besides creating a mess on and around the recorder with their droppings. One station has effectively prevented this type of interference, by covering all possible perching places around the recorder with pointed metal 'teeth', large enough to prevent the birds from alighting. (These teeth have been cut from strips of metal).

At another station the observer has to walk through a field to the enclosure which is within it. Unless the observer is accompanied the observation is delayed because the field contains a bull and no one is prepared to run the gauntlet solo. This could be an example of animal to human vandalism.

Désirée Allen

AUTOMATIC CLIMATOLOGICAL RECORDING EQUIPMENT

The Meteorological Office has embarked upon a programme of installing a number of Automatic Climatological Recording Equipments (ACRE) at some seventy locations in the United Kingdom.

At present a climatological observer makes an observation by reading various instruments, making visual estimates of those items which cannot be measured by instruments and writing down these readings in an observation Register. These observations are then analysed to produce means, extremes and, where the records have existed for a long time, some indication of climatological trends.

The powerful computing facilities available to the modern climatologist are being used to answer some very complicated questions. Satisfactory answers to investigations into the weather aspects of the development of alternative energy sources, for example, can only be found if there is initially sufficient raw data. There are, unfortunately, large gaps in our climatological network where the probability of finding voluntary observers and establishing reporting stations is very low. The Highlands of Scotland and similar areas come to mind. An automatic station can fulfil the need to fill these gaps and this is the reason for ACRE.

ACRE will be able to do some things faster and more frequently than a human observer such as noting the wind and the various temperatures, but instead of writing them in a Register ACRE will store the observations on magnetic tape from which the results can be produced very rapidly on a computer. There are some observations, however, that ACRE will not be able to do very well at first. It will not be able to measure the snow depth or snow cover or cloud amount among other elements so it will need some help from a human observer from time to time. The intention is that a caretaker/observer will key in additional information onto the tape from a teleprinter housed nearby, probably at 0900 GMT daily.

ACRE will look very much like a large, fully equipped meteorological instrument enclosure. A plot of ground 17 metres square with a surrounding fence will contain a ventilated thermometer screen, raingauges, hygrometer, solarimeter, sunshine recorder, concrete slab, grass and earth thermometers and a mast or tower supporting

the anemometer at 10 metres. Some stations may have additional sensors. Each ACRE will have a microprocessor and, at some distance from the enclosure, a suitable building which will house the data-logging tape recorder, a visual display and the keyboard for the input of data. The cassette tapes will probably be changed monthly and the full ones sent to Bracknell for processing. Some climatological observers will eventually work with ACRE and the Office would like to think that they will not regard it as taking over their work but think of it as a tool to enable them to do a more complete and invaluable task in recording the vagaries of the weather.

The first order for 10 ACRE installations has been placed and areas for these have been designated. Site finding is at present in progress, mainly in Scotland where 8 installations have been allocated. The remaining 2 are to go to Redesdale, near Otterburn, Northumbria, and to Tirabad, near Llangammarch Wells in Powys. The whole ACRE programme is long and eventually there will be installations in many parts of both England and Wales as well as Scotland.

LETTERS TO THE EDITOR

Ed:

I have to start with two explanations of my notes in the last issue. Firstly, the last sentence of my letter of 16 November 1978 to Mr Thyssen-Gee ("I agree with your comment on error No. 2") has been taken by some as meaning that "nil" rain should be recorded. My agreement was that no rain may be in the gauge. The correct procedure in such a case is set out on p. 137 of the Observer's Handbook (3rd Edition) i.e. the entry "trace" should be made.

Secondly, in my reply to Mr Whitaker I said that Depth of Fresh Snow was now calculated by the computer from differences in depth of snow. In fact, this is how Met O 3 would do it if there is a requirement but at present they do not have any use for the information. However, our Hydrometeorology Branch have asked for such a measurement and it is likely that a Met O 8 form will be sent to you shortly asking if you would make these measurements.

Sorry for the ambiguities and wrong information but these little things are bound to happen while I am Editor.

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Worthing Sussex

2 April 1979

I have read with interest your 2 Newsletters and refer particularly to Mrs Allen's article on vandalism and the difficulties in combating it. Since I took over the duties of observer in Worthing in April 1974 the history of vandalism has been as follows:

a. Grass minimum thermometer broken 14 April 1974

b. Dry, wet, maximum and minimum thermometers stolen 18 May 1974

c. Grass minimum thermometer stolen 6 April 1979.

A chestnut paling fence was then provided inside the existing spiked iron fence. However, the vandals were seen from time to time using "commando tactics" to get at the equipment by mounting both fences with old mattresses. Police and Park Patrols were then used for some months as a deterrent.

Six grass minimum thermometers were broken between 16 February 1975 and 4 February 1978, being particularly vulnerable to brick, stones and bottle throwing because of the period of time it lies exposed. On many occasions as many as 6 half-bricks and a broken bottle have been found in the station on a Monday morning near a shattered thermometer.

The latest piece of vandalism was the removal of the sunshine recorder sphere and base from an 85 ft tower of a multi-storey car park which coincided with advertisements for secondhand sunshine recorders. The tower is now guarded by a 3 strand wire framework set out at an angle to deter the "keen climber" with an anti-vandal panel fitted at the base of the tower where the "enthusiastic vandal" may have felt able to climb on at a lower level previously.

All my equipment is insured with the Borough Council's insurers and I update the cover annually.

C G Hatch
Borough Met Observer

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Met Office Research Unit Malvern

10 April 1979

I was recently reading some comments you made in the Newsletter in reply to Mr Thyssen-Gee's query regarding grass minimum temperatures being sometimes higher than the air minimum. My wife is the observer for Malvern Climat Station and has had occasional instances of this also. The explanation appears to be as follows.

At Malvern, in common with many other sites, the thermometers are read and re-set once only daily (at 0900 GMT). By this time, the sun may have begun to shine on the grass thermometer so that the temperature recorded by it will have risen substantially higher than the air temperature and may exceed the temperature in the screen. Thus at 0900 the grass minimum thermometer may be re-set to a higher value than is the air minimum thermometer. If the following night is comparatively mild, the temperatures may not fall low enough to depress the grass minimum down to the temperature previously set on the air minimum. This may occur most frequently in the early spring and late autumn when the air temperature is often slow to rise after a chilly night but the sun has enough power to quickly heat a thermometer exposed to it.

Should this information account for some of the discrepancies, it might be worthwhile encouraging observers to check that the grass minimum has not been re-set to a higher temperature than the current 0900 air temperature when the sun is shining.

Frank Hill

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Penmaen Gower near Swansea
West Glamorgan

5 April 1979

Re the letter by Mr R A Thyssen-Gee about differences he has with his syphoning raingauge, I fortunately find it compares quite favourably with the 5 inch standard gauge though in heavier rainfall sometimes, especially in windy weather, then there is variation. I don't know whether he has a Mk 1 or Mk 2 but the latter has a more rapid syphoning and also has a large rain trap when doing so, to collect any loss and return it to the chamber, though I'm afraid I do not find the trap works that well, though these couple of points may be of interest to him.

My problem this winter especially has been to prevent the float being damaged by being frozen in the chamber of a Mk 1. The Mk 2 has a plastic float and does not damage. If no electricity is laid into the gauge, with a bulb fitted inside to give off a little heat to prevent freezing, then Nite-lights have to be burnt in a brass container, standing in place of the electric light bulb. The problem sometimes in very windy weather is that the wretched matches keep going out and the gauge gets filled up with match ends and not lighted Nite-light! This winter as a tip and a safeguard, a little anti-freeze was added occasionally to the chamber.

Two points I would like to ask:

i. Is it possible to have a list of climat stations with their respective locations and authorities - the last one I have is 4 years old, by this I seem to be the only privately run station in Wales - could you confirm this?

ii. I was told last year that a new Observer's Handbook was to be published (Mark 4)? and sent to observers is this now available or still in the hands of the presentors or printers - a mammoth job, no doubt for both.

John F Powell

Ed: In reply to the 2 queries

i. George Swift - please note.

ii. The Observer's Handbook is still in course of revision (a tyrannosaurus not a mammoth job) but hopefully will be with you all within the foreseeable future (as the Civil Servants say).

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Alderney, Channel Islands

6 April 1979

Having just read the March number of "European Community" containing an article "Taming the Weather" (Oh the vanity of man) and a summary of world weather extremes in the last 20 years, it occurred to me that the most surprising record of all would be an <u>average</u> month.

How often in fact do climatological observers record a month in which the sunshine is within one hour of the preceding 30-year average, the rainfall is within one millimetre of the average, <u>and</u> the mean temperature is within (say) 0.2 deg of the average? It is what I myself am looking out for!

Owen Johns

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Scole near Diss, Norfolk
17 April 1979

During the wet and snowy weather of the last 3 months, I have taken steps to ensure that no water can get into the tubes of the 3 earth thermometers. What I have done is to place a glass bottle over each of the tubes, bottles long enough to make certain that they cover the tubes <u>and</u> stand freely on the flanges of the tubes and the idea has worked well, so well that it has occurred to me to keep them there permanently. However, one point comes to mind - in the summer months, the sun, shining through the glass, will warm the tube covers and the tops of the tubes much more than would be the case if there were no bottles there. Now, is it possible that the excess warmth could be conducted down the tubes and warm up the air in them and so invalidate the earth thermometer readings? The point has, of course, not arisen so far but will soon do so.

L Atkinson

From Met O 3a. We do not know whether the bottles will have any effect but they may. On the other hand, we do like to keep to a standard so could Mr Atkinson please be advised to keep to the normal cap or plug - and hope next winter will be milder.

John George

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Hastings, Sussex

13 May 1979

Further to my letter published in the second issue of the Newsletter, I feel that I can now safely write in reply to your comment on snow depths.

Despite the worst winter since 1963, although the character and extent of the adverse conditions were not very similar, my deepest snow depth was recorded at 0900 on 1 January 1979 at a mere 16 cm (6.3 ins) so my previous record of 1 ft still stands.

R A Garrad
Borough Meteorologist

Ed. All applications for winter breaks, holiday weekends out-of-season, Christmas parties or other non-ski type festivities should be addressed to Mr Garrad and not to the Director-General of the Meteorological Office.

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Editor:

Thank you all for your contributions to the Newsletter. These are obviously read with interest by those who receive it.

The title 'Newsletter' sounds rather colourless and uninspired - any ideas for something better, please.

David Smith

News of Stations and Admin Notes

Some new stations have opened in the first half of this year and we welcome them to the voluntary network. Amongst these are the Nature Conservancy Councils climatological station at Cors Fochno, Nr Aberystwyth, Dyfed; the Southern Water Authority's station at Otterbourne, nr Winchester, Hampshire; the Severn Trent Water Authority's station at Ludlow, Shropshire; the school station at East Dereham High School, Norfolk, and a station at the Golf Course, Constantine Bay, Nr Padstow, Cornwall.

To these and all our climatological stations may I once more offer a reminder that all requests for instruments and equipment, forms and stationery should be sent to Met O 1c(3), Eastern Road, Bracknell, Berkshire RG12 2UR in the first instance. By doing so, you will save the not inconsiderable time that is always taken up if your messages are sent to other branches of the Meteorological Office where your station may not be immediately recognised as belonging to the voluntary network.

To tidy up the "News of Stations" for this first half of 1979, so far this year we have news of the closing of only 1 station - Kensington Palace, which had a very long record of co-operation. Reports from Kensington Palace were first published in the Monthly Weather Report in 1918 and we regret very much that such a long serving station is no longer reporting.

G W Swift

EXTRACT FROM 'THE SCOTSMAN' OF 21 APRIL 1979

'True professionals

There was a time when a member of the professions could be negatively classified as a highly trained public servant who never went on strike. That notion has been almost totally discarded but it may have contained a germ of truth. There is something, no doubt puerile in the eyes of some, not ignoble about a conception of service continuously sustained no matter how rough the going or how plentiful the discouragement. It cannot be said that Miss Mary Redfern aged 77, and her 72-year-old sister Miss Dorothy Redfern, who have just retired after many years of unbroken service, were fair-weather workers. Far from it, in one sense at least they were true professionals. Those 2 spinster ladies, who looked after a post office, were responsible for the manning of weather station 237, located in a remote cottage 1250 feet up in the Northern Pennines. Reluctantly they have come to the conclusion that because of advancing age they can no longer maintain their high professional standards.

The 2 sisters, year after year, reported their weather to RAF Leeming, 30 miles away. Unlike the New York General Post Office their upland cottage had no grand sweep of granite steps and no Corinthian colonnade with a frieze adorned with the words 'Neither snow nor rain nor heat nor gloom of night stayed these couriers from the swift completion of their appointed rounds.' The sisters are probably unfamiliar with that rousing line from Herodotus but the quotation reflects their conception of duty's around. It is inconceivable that they were richly rewarded financially and one cannot believe that discontent over differentials clouded life at weather station 237. With their recording instruments to attend to and their post office to look after the sisters must have been far too busy to worry about any injustice which tarnished their lot.

All over the country, often in lonely, isolated places, a devoted band of reporters, like the Redfern sisters, superintend their meteorological stations, inspecting their raingauges, their thermometers, their sunshine recorders, their barographs, their anemometers, and so forth, and transmit their observations to

accredited centres. They have to be as punctual and attentive as dairy maids and, presumably, if they ever feel like a holiday, they have, like Doctors, to secure the services of a qualified and reliable locum. Only occasionally, as when last year the Misses Redfern were awarded the BEM, do we hear of the ceaseless vigilance of those devoted reporters who probably have no desire for public recognition. Satellites out in space may be marvellous but, as long as the inhabitants of this island cherish their weather and find in it an unending source of wonder, we, who chatter so vaguely about the weather, must salute the true professionals who keep uninterrupted guard and watch, whatever the pressure, high or low, in millibars.'

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BS

Weather in the United Kingdom

January - June 1979

The very cold wintry weather which began at the end of December continued throughout most of January with only brief milder spells. Night frosts were very severe at times, especially in Scotland where Carnwath (Strathclyde) recorded a minimum temperature of -24.6 °C on the night of 12th/13th. This was the lowest temperature recorded in any month in the United Kingdom since 1955 and the second lowest since 1895. It was the coldest January over the United Kingdom as a whole since 1963, and since the early 1940s in some places. There was heavy snow at times with considerable drifting in many areas and level depths of more than 50 cm were reported at a few places in the north. Despite the cold and snowy weather, however, many areas had well above average sunshine and the total of 105.1 hours at Torbay (Torquay) was the highest January total since records began there towards the end of the last century. February was also a cold month, although it became milder during the last week. There were further heavy falls of snow in many areas, particularly during the first half of the month and strong winds led to extensive drifting which made depths of level snow difficult to measure. However, level snow depths of more than 50 cm were reported over the Pennines and 20 to 30 cm in parts of East Anglia around mid-month. The milder weather at the end of February lasted until mid-March when snow returned to most parts of England and Wales on the 16th and later to south Scotland. The snow was particularly heavy with much drifting in north-eastern England and over the northern Pennines. At Newcastle snow fell continuously from the morning of the 16th until the morning of the 19th, a level depth of 45 cm accumulating at Gosforth. The weather remained generally cold until the end of March with a brief mild spell in southern areas during the last week. The first ten days of April were also cold with further snow or sleet showers in many areas. The weather then became much warmer in most places and the London Weather Centre

recorded its warmest Easter (13th to 16th inclusive) since 1949. However, the second half of the month was cool and changeable, sleet and snow showers returning to northern areas on the 29th and 30th. The weather remained cold for the first ten days of May and there was widespread night frost in many areas of the United Kingdom; the temperature fell to -7.1 °C at Eskdalemuir on the 4th, the lowest May temperature there since the Observatory opened in 1914. There was a brief warm spell around mid-month but then the cool changeable weather returned and lasted for much of June. There were a few warm and sunny days in most areas during the month of June, however, particularly on the 3rd in Scotland and between the 17th and 20th in many parts of the United Kingdom. There were widespread thunderstorms over southern and central parts of England and Wales on the 24th, when tornado damage occurred in places in east Berkshire and south Hertfordshire.